

We claim:

Sub 17

1. A process for formulating a ruminant food ration, the process comprising:
determining the methionine needs of the ruminant,
identifying a plurality of natural or synthetic feed
5 ingredients and the nutrient composition of each of said ingredients wherein one of said ingredients is 2-hydroxy-4-(methylthio)butanoic acid or a salt, amide or ester thereof, and

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10 formulating a ration from the identified feed ingredients to meet the determined methionine needs of the ruminant which comprises one or more grains, a hydroxy analog of methionine, and optionally a bypass fat wherein (i) the hydroxy analog of methionine is selected from the group consisting of 2-hydroxy-4-
15 (methylthio)butanoic acid and the salts, amides and esters thereof, (ii) the hydroxy analog of methionine is added separately from any bypass fat which is included in the ration, and (iii) the ration is formulated on the basis that at least 20% of the hydroxy analog of
20 methionine is assumed to be available for absorption by the ruminant.

2. The process of claim 1 wherein the hydroxy analog of methionine is 2-hydroxy-4-(methylthio)butanoic acid.

3. The process of claim 1 wherein the ration is formulated on the basis that at least 40% of the hydroxy analog of methionine is assumed to be available for absorption by the ruminant.

4. The process of claim 1 wherein the hydroxy
analog of methionine is 2-hydroxy-4-(methylthio)butanoic
acid and the ration is formulated on the basis that at
least 40% of the hydroxy analog of methionine is assumed
5 to be available for absorption by the ruminant.

5. The process of claim 1 wherein the ration does
not comprise a bypass fat.

Sub B1
6. A process for formulating a ruminant food
ration, the process comprising:
determining the methionine needs of the ruminant,
identifying a plurality of natural or synthetic feed
5 ingredients and the nutrient composition of each of said
ingredients wherein one of said ingredients is 2-hydroxy-
4-(methylthio)butanoic acid or a salt, amide or ester
thereof, and
formulating a ration from the identified feed
10 ingredients to meet the determined methionine needs of
the ruminant which comprises mixing one or more grains
with a liquid comprising 2-hydroxy-4-(methylthio)butanoic
acid wherein the ration is formulated on the basis that
at least 20% of the 2-hydroxy-4-(methylthio)butanoic acid
15 is assumed to be available for absorption by the
ruminant.

7. The process of claim 6 wherein the ration is
formulated on the basis that at least 40% of the hydroxy
analog of methionine is assumed to be available for
absorption by the ruminant.

Sub A2
~~8. A process for formulating a ruminant food
ration, the process comprising:~~

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determining the methionine needs of the ruminant,
identifying a plurality of natural or synthetic feed
5 ingredients and the nutrient composition of each of said
ingredients wherein one of said ingredients is 2-hydroxy-
4-(methylthio)butanoic acid or a salt, amide or ester
thereof, and

formulating a ration from the identified feed
10 ingredients to meet the determined methionine needs of
the ruminant which comprises mixing one or more grains
with a hydroxy analog of methionine, wherein (i) the
ration is formulated on the basis that at least 20% of
the 2-hydroxy-4-(methylthio)butanoic acid is assumed to
15 be available for absorption by the ruminant, (ii) the
ration does not comprise a bypass fat, and (iii) the
hydroxy analog of methionine is selected from the group
consisting of 2-hydroxy-4-(methylthio)butanoic acid and
the salts, amides and esters thereof.

9. The process of claim 8 wherein the hydroxy
analog of methionine is 2-hydroxy-4-(methylthio)butanoic
acid.

10. The process of claim 8 wherein the ration is
formulated on the basis that at least 40% of the hydroxy
analog of methionine is assumed to be available for
absorption by the ruminant.

11. A process for formulating a lactating dairy cow
food ration, the process comprising:

determining the methionine needs of the cow,
identifying a plurality of natural or synthetic feed
5 ingredients and the nutrient composition of each of said

ingredients wherein one of said ingredients is 2-hydroxy-4-(methylthio)butanoic acid, and

10 formulating a ration from the identified feed ingredients to meet the determined methionine needs of the cow which comprises mixing one or more grains with 2-hydroxy-4-(methylthio)butanoic acid, wherein the ration is formulated on the basis that at least 40% of the 2-hydroxy-4-(methylthio)butanoic acid is assumed to be available for absorption by the cow.

12. The process of claim 11 wherein the ration is formulated on the basis that between about 40% and about 55% of the 2-hydroxy-4-(methylthio)butanoic acid is assumed to be available for absorption by the ruminant.

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